NASA Technology Integration Governance Policy

Introduction: The Office of the Chief Technologist (OCT) is charged with providing strategic coordination, integration and communication of the Agency's technology investments. The purpose of this document is to establish how OCT will carry out this technology integration charter. The scope of this policy does not include the approach by which the technology programs, either within the Mission Directorates or OCT, are managed. Such Program management activities will follow existing management and governance procedures.

Technology integration requires knowledge of all Agency technology programs, as well as execution of a strategic planning process among these programs and their sponsoring organizations. The Office of the Chief Technologist shall accomplish these objectives through participation in the planning of all program level Agency technology activities, participation in significant technology program level reviews and decision meetings, and leadership of a Headquarters-level technology integration and coordination council. Consistent with Agency governance, the Chief Technologist will be a member of the Agency's Strategic and Program Management Councils and Mission Support Council to inform Agency decision-making. As chair of the NASA Technology Executive Council (NTEC), the Chief Technologist has authority to make decisions consistent with the Council's charter (see below). The overall integration strategy is enumerated through the following six actions.

1) Participation[1] of OCT in any program level technology formulation activity within the Agency.
2) Participation[2] of OCT in any program level performance review of an Agency technology activity (e.g. Mission Directorate monthly program status meetings) in accordance with International and commercial agreements.
3) Participation[3] of the Chief Technologist, or his designee, in Mission Directorate-level decision meetings[4] regarding technology program prioritization, performance, or scope.
4) OCT leadership of an Agency council (NTEC described further below) in which technology integration, coordination, strategic planning and management are performed.
5) Leadership of the Chief Technologist, or his designee, in Agency-level decision meetings (e.g., SMC) regarding technology program prioritization, performance or scope.
6) OCT leadership of a Center Technology Council (CTC described below) in which technology coordination, communication and strategic planning inputs are received from the Centers.

NASA Technology Executive Council: The NASA Technology Executive Council (NTEC)[5] is organized and chaired by the NASA Office of the Chief Technologist. Council membership includes the Mission Directorate AAs (or their designees), and the NASA Chief Engineer (or designee). The function of NTEC is to perform Agency-level technology integration, coordination and strategic planning. NTEC does not perform programmatic management for the OCT Space Technology Program (STP) or Mission

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[1] Participation is defined as either, an observer with speaking rights, or a team member.

[2] Participation is defined as an observer with speaking rights for Mission Directorate technology programs.

[3] Participation is defined as an observer with speaking rights.

[4] It is recognized that some technology development activities are directly embedded within flight missions programs and thus are not standalone technology efforts. The applicability of OCT technology integration governance over these activities requires case-by-case adjudication. In general, only activities that are below TRL 6 and those that have broad applicability beyond the specific mission, require coverage under OCT technology integration governance as specified within this document.

[5] NTEC replaces the TISC previously managed by the Office of the Chief Engineer and the TIC managed by the Innovative Partnership Program. In addition, the Center Technology Council, also chaired by the Office of the Chief Technologist, will provide coordination, communication and strategic planning input from the Centers.

Directorate technology programs. NTEC will hold regular status meetings and time-critical decision meetings on as needed basis, as well as quarterly assessment and yearly strategic decision meetings.

In these meetings, held in a timely manner to support the Agency's regular budget and planning cycles, NTEC will:

a) Review, from an Agency perspective, the progress of each project level technology activity, against the baseline performance milestones, as assessed via the current Agency-level Baseline Performance Review (BPR) process.
b) Assess the program level budget and schedule adequacy, of the Agency's technology development activities to meet Agency strategic goals.
c) Assess the Agency level technology gaps, overlaps and synergies between the Agency's technology programs.
d) Assess the technology maturation progress against the Mission Directorate's goals, objectives, missions and timelines, as well as the Agency technology roadmaps and strategic goals.
e) Assess the balance and prioritization of the Agency's technology investment portfolio.
f) Develop and review decisional recommendations regarding the Agency's technology investment plans.

Based upon these reviews and assessments, OCT working with the NTEC, will prepare quarterly and yearly reports. The quarterly reports will focus on current technology programs and projects assessed from an Agency level perspective. The progress and performance of technology programs and projects, as well as identification of gaps and overlaps resulting from changes during technology program execution will be highlighted. The yearly reports will focus on strategic technology planning, road-mapping and prioritization activities at an Agency level, while taking into consideration past technology development planning efforts.

Technology Integration and Coordination Decisional Authority: OCT working through NTEC will make quarterly and yearly decisional recommendations. Decisional recommendations may include adjustments in the scope, budget or schedule of any Agency technology program activity, and/or any Agency technology development partnership. The decision process is as follows:

- OCT will develop draft decisional recommendations for the Agency's technology plans.
- NTEC will convene to review decisional recommendations, with members providing feedback.
- For tactical decisions that do not impact strategic planning, or strategic decisions with complete NTEC concurrence, NTEC decisional meetings provide final adjudication.
- OCT will present final strategic decisional recommendations to the SMC on a yearly, and as needed basis.

Documentation: Through the NTEC, and with inputs from the Mission Directorate technology programs, and in accordance with existing governance documents, OCT is responsible for producing and communicating:

a) Agency technology prioritization and strategic roadmap documentation vs. the Mission Directorate destinations, missions and timelines, as well as the Agency's strategic goals.
b) Agency technology investment portfolio documentation.
c) Agency technology guidance and policy documentation.
d) Minutes from the NTEC meetings, and quarterly/yearly Agency technology performance reports.
e) Decisional recommendations regarding the scope, budget and schedule of Agency technology plans.

Center Technology Council (CTC): The Center Technology Council (CTC) is organized and chaired by the NASA Office of the Chief Technologist. Council membership includes the Center Chief Technologist (CCT) from each NASA Center, and a representative from OCE. While NTEC described above is a broad Agency level council with a focus on Program funded activities, the CTC will focus upon institutionally funded activities. The CTC will meet on a regular, approximately quarterly, basis to

discuss program status, and on an as needed basis for decisional meetings. The responsibilities of the CTC include:

a) Assess the Agency technology road-mapping and technology prioritization activities from a bottoms-up, institutional perspective, and provide these assessments to NTEC.
b) Provide NTEC with recommended changes in technology program scope, prioritization and road-mapping from the Centers perspective.
c) Provide NTEC with "beyond-program" technology inputs for potential future development.
d) Develop Center reports on the performance of the innovation and technology development activities at each Center.
e) Identification of inter-center technology leveraging opportunities.
f) Develop technology intelligence reports (i.e. have the function to look outside the walls of NASA for technology opportunities)

Center Chief Technologist: Each NASA Center (including JPL) will have a Center Chief Technologist (CCT). While specific assignment of Center Chief Technologist roles and responsibilities are decisions for Center management, as a matter of guidance and consistency, the Office of Chief Technologist is expecting the Center Chief Technologists to fulfill the following responsibilities:

a) Report to Center management and serve as the principal advisor to the Center leadership on matters concerning Center-wide technology development and leverage.
b) Communicate Center technology capabilities through representation on CTC.
c) Serve as Center POC for the NASA Center Innovation Fund. Responsible for reporting and programmatic management of the Center Innovation Fund at the Center level.
d) Lead technology transfer, SBIR/STTR and commercialization opportunities across the center, including activities of solicitation, evaluation, and selection.
e) Serve as Center innovation change agent, particularly regarding the workforce's capacity to innovate.
f) Document/demonstrate/communicate societal impact of center technology accomplishments.